

AMENDMENTS TO THE CLAIMS

The following listing of claims replaces all prior versions of claims in the application.

1-7 Cancelled.

8. (New): A stirling engine, characterized in that a high temperature section and a member connecting the high temperature section and a low temperature section are formed of different materials and are integrally bonded to each other, the high temperature section being formed into an integral structure by means of a heat resistant/high heat conductive material having high heat resistance property and high heat conductivity, and the member connecting the high temperature section and the low temperature section being made up of a member which contacts with a flow of working gas, and being formed of a heat resistant/low heat conductive material having low heat conductivity.

9. (New): The stirling engine according to claim 8, characterized in that the heat resistant/high heat conductive material for forming the high temperature section is a ceramics selected from silicon carbide ceramics, silicon nitride ceramics, aluminum nitride ceramics, or alumina ceramics, or a functionally gradient material of the ceramics and metal.

10. (New): The stirling engine according to claim 8, characterized in that the heat resistant/low heat conductive material for forming the member connecting the high temperature

section and the low temperature section is a ceramics selected from silicon oxide, cordierite, mica, aluminum titanate, or quartz ceramics, or a functionally gradient material of the ceramics and metal.

11. (New): The stirling engine according to claim 8, wherein the stirling engine is a β type stirling engine in which a displacer piston and a power piston are disposed in the same cylinder.

12. (New): The stirling engine according to claim 8, characterized in that the stirling engine is a γ type stirling engine in which a displacer piston and a power piston are disposed independently in different cylinders.

13. (New): The Stirling engine according to claim 8, characterized in that the stirling engine is an α type Stirling engine having two independent pistons, which are, an expansion piston disposed in an expansion cylinder and a compression piston disposed in a compression cylinder.

14. (New): A stirling engine, characterized in that a high temperature section and a member connecting the high temperature section and a low temperature section are formed of different materials and are integrally bonded to each other, the high temperature section being formed by integrally molding an expansion space head portion and a high-temperature side heat exchanger main body with the same heat resistant/high heat conductive material having high heat

resistance property and high heat conductivity.

15. (New): The stirling engine according to claim 14, characterized in that the heat resistant/high heat conductive material for forming the high temperature section is a ceramics selected from silicon carbide ceramics, silicon nitride ceramics, aluminum nitride ceramics, or alumina ceramics, or a functionally gradient material of the ceramics and metal.

16. (New): The stirling engine according to claim 14, characterized in that the member connecting the high temperature section and the low temperature section is formed of a heat resistant/low heat conductive material having low heat conductivity.

17. (New): The stirling engine according to claim 16, characterized in that the heat resistant/low heat conductive material for forming the member connecting the high temperature section and the low temperature section is a ceramics selected from silicon oxide, cordierite, mica, aluminum titanate, or quartz ceramics, or a functionally gradient material of the ceramics and metal.

18. (New): The stirling engine according to claim 14, wherein the stirling engine is a β type stirling engine in which a displacer piston and a power piston are disposed in the same cylinder

19. (New): The Stirling engine according to claim 14, characterized in that the stirling engine is a γ type stirling engine in which a displacer piston and a power piston are disposed independently in different cylinders.

20. (New): The Stirling engine according to claim 14, characterized in that the stirling engine is an α type Stirling engine having two independent pistons, which are, an expansion piston disposed in an expansion cylinder and a compression piston disposed in a compression cylinder.